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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/064,251

06/25/2002

Guangzhi Li

2001-0337

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7590

10/04/2006

AT&T CORP.  
ROOM 2A207  
ONE AT&T WAY  
BEDMINSTER, NJ 07921

EXAMINER

MERED, HABTE

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/064,251

Applicant(s)

LI ET AL.

Examiner

Habte Mered

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The preliminary amendment filed on 8/29/2002 has been entered and fully considered.
2. Claims 1-13 are pending.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1** is rejected under 35 U.S.C. 102(e) as being anticipated by Lindhorst-ko (US 6, 725, 401).

*Lindhorst-ko teaches optimizing fault notification and correlating knowledge of network topology to paths traversing the network.*

4. Regarding **claim 1**, Lindhorst-ko discloses a method for signaling in a mesh telecommunication network (**See Figure 1, Column 1:50-65, and Column 5:36-55**) comprising the steps of: (i) receiving a request to establish a label switched path through the mesh network (**See Column 3:50-60 and Column 6:20-30**); (ii) computing a service path and a restoration path (**Column 7:42-50**); (iii) sending a label switched path request along the restoration path requesting reservation of shared resources along the restoration path without allocating the shared resources and wherein the label switched path request includes service path information. (**Column 7:8-35 Note that as the LSP path setup message is propagated in Lindhorst-ko system without allocating any resources and inherently has to contain some level path**

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information as it is after all a path setup message. Each node in the path allocates resources after receiving the path setup message and informs the source node via resource allocation message.)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2, 4, and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindhorst-ko (US 6, 725, 401) in view of Kim et al (Byeongsik Kim, Woojik Chan, Janeho Yoo, "Constraint-based LSP setup message reversing of CR-LDP", Pages 875-880, IEEE, February 2, 2001), hereinafter referred to as Kim.

6. Regarding **claim 2**, Lindhorst-ko fails to disclose a method wherein the service path information comprises a list of link used along the service path.

*Kim discloses feedback mechanism for the status of LSP setup message to setup a Label Switched Path.*

Kim discloses a method wherein the service path information comprises a list of link used along the service path. **(See Page 876, 1<sup>st</sup> Column, last three lines; Page 876, 2<sup>nd</sup> Column, Section 2.2, 3<sup>rd</sup> paragraph;)**

7. Regarding **claim 4**, Lindhorst-ko fails to disclose a method wherein the label switched path request is an RSVP PATH message.

Kim discloses a method wherein the label switched path request is an RSVP PATH message. **(See Page 877, 1<sup>st</sup> Column, 3<sup>rd</sup> Paragraph)**

8. With respect to **claims 2 and 4**, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lindhorst-ko's method to incorporate a method wherein the service path information comprises a list of link used along the service path and wherein the label switched path request is an RSVP PATH message. The motivation being to keep the link state information kept in the database of each node up to date and to provide a means to inform each node the exact path the source desires and a feedback to indicate if the path has been setup or not.

9. Regarding **Claim 5**, Lindhorst-ko discloses a method wherein the mesh network is an optical network. **(See Figure 1 and Column 5:40-55)**

10. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindhorst-ko (US 6, 725, 401) in view of Pieda et al (US 6, 882, 627), hereinafter referred to as Pieda.

Lindhorst-ko fails to expressly disclose a method wherein the service path information comprises a list of shared risk link groups traversed by the service path. Lindhorst-ko discloses an expressive LSP path setup request message that indicates the exact path to be setup and indicates the path between the primary and secondary should be optimally diversified.

*Pieda teaches a method of selecting multiple paths taking into account shared risk link groups.*

Pieda discloses a method wherein the service path information comprises a list of shared risk link groups traversed by the service path. **(See Figure 2, step 2-2, and Column 5:40-55)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lindhorst-ko's method to incorporate a method wherein the service path information comprises a list of shared risk link groups traversed by the service path. The motivation to include a list of shared risk link groups traversed by the service path is to provide the ability for each node to eventually do a topology transformation of the network topology into a virtual topology which discourages the use of network resources in any shared risk group as stated in Pieda Column 2:20-25.

11. **Claims 6, 8, 10, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brimmage et al (US 6, 044, 064), hereinafter referred to as Brimmage, in view of Bader et al (US 6, 542, 934), hereinafter referred to as Bader.

*Brimmage teaches use path verification signals in mesh networks.*

12. Regarding **claims 6 and 10**, Brimmage teaches a method for signaling in a mesh telecommunication network **(Figure 1)** comprising: the step of receiving a request to normalize a restored connection. **(See Column 4:1-10 and 4:40-45)**

Brimmage fails to disclose a "bridge and roll" method comprising the steps of (ii) bridging a signal onto both a service path and a restoration path to a node in the mesh network; (iii) sending a first message to the node requesting that the node bridge and roll the service path and the restoration path; and (iv) if a second message is received from the node confirming that the node has bridged and rolled the service path and the

restoration path, halting transmissions along the restoration path and sending a third message to the node confirming that the connection is normalized.

*Bader teaches a method of non-disruptively rerouting network communications from a secondary path to a primary path and effectively teaches "make before break" method also known as "bridge and roll" method.*

Bader discloses a "bridge and roll" method comprising the steps of (ii) bridging a signal onto both a service path and a restoration path to a node in the mesh network **(Figure 1 and Figure 2, steps 14 and 16 and Figure 3)**; (iii) sending a first message to the node requesting that the node bridge and roll the service path and the restoration path **(Figure 3, step 30)**; and (iv) if a second message is received from the node confirming that the node has bridged and rolled the service path and the restoration path, halting transmissions along the restoration path and sending a third message to the node confirming that the connection is normalized **(Figure 3, steps 32-44)** **(Examiner would like to point out that the "bridge and roll" ability for telecommunication nodes is well known in the art and the Examiner takes Official Notice regarding the limitations describing the message exchanges between nodes to implement the "bridge and roll" capability. A whole set of message exchanges can occur to implement the "bridge and roll" method depending on the protocol used and whether it is acknowledged or not as illustrated for instance described in Graves et al US Pub. No. 2001/0050790)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brimmage's method to include a "bridge and roll" method.

The motivation being such method provides a non-disruptive service transfer into the Primary path.

13. Regarding **claims 8 and 12**, Brimmage discloses a method of further comprising the step of verifying the service path prior to normalizing the connection. **(See Figure 3, step 30 and Column 8:10-20)**

14. **Claims 7 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brimmage in view of Bader as applied to claims 6 and 10 respectively above, and further in view of Kim et al (Byeongsik Kim, Woojik Chan, Janeho Yoo, "Constraint-based LSP setup message reversing of CR-LDP", Pages 875-880, IEEE, February 2, 2001), hereinafter referred to as Kim.

The combination of Brimmage and Bader fails to disclose a method, where in the messages are RSVP messages.

Kim discloses a method, where in the messages are RSVP messages. **(See Page 877, 1<sup>st</sup> Column, 3<sup>rd</sup> Paragraph)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Brimmage's and Bader's method to incorporate a method wherein the messages are RSVP messages. The motivation being to keep the link state information kept in the database of each node up to date and to provide a means to inform each node a feedback to indicate if the path has been setup or not as RSVP messages has such capability.



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15. **Claims 9 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brimage in view of Bader as applied to claims 8 and 12 respectively above, and further in view of Nagarajan et al (US 7, 099 327), hereinafter referred to as Nagarajan.

Brimage fails to teach a method wherein the service path is verified using LMP.

*Nagarajan teaches an Optical Transport Network.*

Nagarajan discloses a method wherein the service path is verified using LMP

**(See Column 3:63-67)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Brimage's method to incorporate a method based on LMP. The motivation being Link Management Protocol (LMP) is ideal and optimal for using it in Optical Networks to compute the optical path as illustrated in Nagarajan's Column 3:63-67.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

09-28-2006  
HM



HASSAN KIZOU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600